

blooms (N.C.D.N.R.C.D. 1980).

Coastal nutrient-related water quality problems, ranging from gradual eutrophication to massive algal blooms, represent a serious threat to commercial, recreational and aesthetic values of affected freshwater and estuarine habitats in eastern North Carolina. Scientific evidence clearly shows that problems associated with eutrophication have had a negative impact on the economic and environmental well-being of this state (Copeland and Riggs 1984; Epperly and Ross 1986; Levine et al. 1990). Much of North Carolina's freshwater discharges into the Albermarle-Pamlico Sound System (A - P System) (Wells and Kim 1989); a system that supports the state's most extensive fisheries, tourist and recreational resources (Copeland 1986; Epperly and Ross 1986; Copeland and Gray 1989). As such, obvious concerns include: 1) Are inorganic nutrients limiting and hence regulating phytoplankton growth in the A - P System? 2) Which nutrients (N or P) act as growth limiting factors? 3) Is accelerated eutrophication, resulting from nutrient enrichment, occurring in the A - P System? 4) Does the A - P System display symptoms of eutrophication, such as noxious or toxic algal blooms or anoxic bottom water? 5) Does nutrient-related eutrophication represent a threat to fisheries, recreational and aesthetic resources in the A - P System? 6) If the above are true, can we properly manage a system of such size and scope in order to avert or reverse long-term water quality degradation?

Research Objectives

Given the concerns outlined above, the following research objectives were addressed in this project: